

CLAIMS

What is claimed is:

1. A method of automatically controlling an output of a laser diode based on the results of a comparison between the current power value of an optical signal output from the laser diode and a basic power value, the method comprising:
 - sampling the current power value of the optical signal output from the laser diode;
 - comparing the sampled current power value with the basic power value; and
 - controlling the output of the laser diode based on the compared results.
2. An apparatus for automatically controlling an output of a laser diode based on the results of a comparison between the current power value of an optical signal output from a laser diode and a basic power value, the apparatus comprising:
 - a sampler sampling the current power value output from the laser diode;
 - a register unit storing the output of the sampler;
 - a basic register unit storing a basic power value;
 - an operator unit outputting a target output value applied to the laser diode based on the current power value stored in the register unit and the basic power value stored in the basic register unit; and
 - a pulse generator generating a control signal controlling a storage timing of the register unit based on recording data to be recorded by the laser diode.
3. The apparatus of claim 2, wherein the sampler is an analog/digital converter.
4. The apparatus of claim 2, wherein:
 - the pulse generator further generates a multiplexing control signal representing a sector to which a peak power, a read power, and a bias power are applied based on recording control signals, each of which controls the peak power, the read power, and the bias power, respectively, and generates a demultiplexing control signal based on the recording data;
 - the apparatus further comprising:
 - registers within the register unit, basic registers within the basic register, and
 - operators within the operator unit corresponding to the peak power, the read power, and the bias power required for the laser diode,
 - a demultiplexer demultiplexing the output of the sampler based on the

demultiplexing control signal and then transmitting the output of the sampler to the registers of the register unit, and

a multiplexer multiplexing outputs of the operators of the operation unit based on the multiplexing control signal and then transmitting the outputs of the operators to the laser diode.

5. The apparatus of claim 2, further comprising a digital/analog converter converting the output of the multiplexer to a digital/analog signal and then transmitting the digital/analog signal to the laser diode.

6. The apparatus of claim 2, wherein the apparatus is built into a pickup.

7. The method of claim 1, further comprising:
holding the sampled current power prior to the comparing.

8. The method of claim 1, further comprising:
generating a control signal based on recording data to be recorded by the laser diode on a medium;

storing the sampled current power according to the control signal and prior to the comparing;

storing a basic power value based upon a type of a medium which is to receive the output of the laser diode;

wherein the comparing comprises comparing the stored sampled current power with the basic power value.

9. The method of claim 8, wherein the basic power value is based on a format of the medium and a maker of the medium.

10. The method of claim 8, further comprising:

generating a demultiplexing signal according to the recording data;

demultiplexing the sampled current power according to the demultiplexing control signal prior to storing the sampled current power;

generating a multiplexing control signal representing a sector to which a peak power, a read power, and a bias power are applied; and
multiplexing the compared results according to the multiplexing control signal.

11. The method of claim 10, wherein the demultiplexed stored sampled current power value comprises a first plurality of bits, and the stored basic power value comprises a second plurality of bits, and the comparing comprises simultaneously comparing ones of the first plurality of bits with corresponding ones of the second plurality of bits.

12. The method of claim 1, wherein the sampled current power comprises a first plurality of bits, and the basic power value comprises a second plurality of bits, and the comparing comprises simultaneously comparing ones of the first plurality of bits with corresponding ones of the second plurality of bits.

13. The method of claim 12, wherein the basic power value is based on a type of a medium which is to receive the output of the laser diode.

14. The apparatus of claim 4, wherein the pulse generator comprises a plurality of delay units and gates which select the sector.

15. The apparatus of claim 2, wherein the basic power value is based upon a type of a medium which is to receive the output of the laser diode.

16. The apparatus of claim 15, wherein the basic power value is based on a format of the medium and a maker of the medium.

17. The apparatus of claim 2, further comprising an NRZI detector which receives the recording data, detects an interrelationship between a current mark and front and back spaces of the mark, and outputs a recording signal to the pulse generator.

18. The apparatus of claim 4, wherein the stored sampled current power value comprises a first plurality of bits, and the stored basic power value comprises a second plurality of bits, and the operation unit simultaneously comparing ones of the first plurality of bits with corresponding ones of the second plurality of bits to generate the target output value.

19. The apparatus of claim 2, wherein the sampled current power value comprises a first plurality of bits, and the stored basic power value comprises a second plurality of bits, and the operation unit simultaneously compares ones of the first plurality of bits with corresponding ones of the second plurality of bits to generate the target output value.

20. The apparatus of claim 18, wherein the first plurality of bits are indicative of the read power, the peak power and the bias power.

21. The apparatus of claim 19, wherein the first plurality of bits are indicative of a read power, a peak power and a bias power of a sector of a medium which is to receive the output of the laser diode.

22. The apparatus of claim 19, wherein the first plurality of bits are indicative of a read power, a peak power, an erase power, a cooling power and a bottom power of a sector of a medium which is to receive the output of the laser diode.

23. An apparatus for automatically controlling an output of a laser diode having an optical signal with a current power value, comprising:
a sampler sampling the current power value of the optical signal from the laser diode;
an operation unit outputting a target output value based upon the sampled current value and a basic power value based upon a type of medium which is to receive the output of the laser diode; and
a controller controlling the output of the laser diode based upon the target output value.

24. The apparatus of claim 23, further comprising:
a register unit storing the output of the sampler prior to being received by the operation unit; and
a basic register unit storing the basic power value prior to being received by the operation unit.

25. An apparatus for automatically controlling an output of a laser diode having an optical signal with a current power value, comprising:

a sampler sampling the current power value of the optical signal from the laser diode, to generate a sampled value having a first plurality of bits indicative of a plurality of power levels;
a basic storage unit storing a basic power value according to a type of a medium which is to receive the output of the laser diode and based upon the plurality of power levels;
an operation unit simultaneously comparing ones of the first plurality of bits with corresponding ones of the second plurality of bits to generate a target output value; and
a controller controlling the output of the laser diode based upon the target output value.

26. The apparatus of claim 25, wherein the basic power level is based upon a format of the medium and a maker of the medium.

27. The apparatus of claim 25, further comprising a register unit storing the current power value prior to being received by the operation unit.